

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
31 December 2003 (31.12.2003)

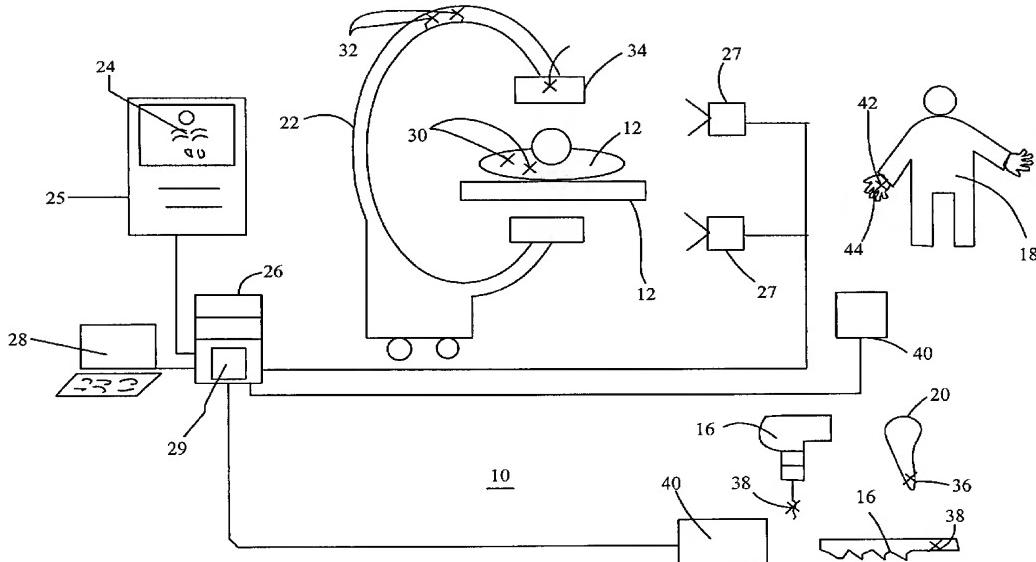
PCT

(10) International Publication Number  
**WO 2004/001569 A3**

- (51) International Patent Classification<sup>7</sup>: **G06F 3/00**,  
A61B 19/00
- (21) International Application Number:  
**PCT/CA2003/000947**
- (22) International Filing Date: 23 June 2003 (23.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/390,188 21 June 2002 (21.06.2002) US
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- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,

[Continued on next page]

(54) Title: COMPUTER ASSISTED SYSTEM AND METHOD FOR MINIMAL INVASIVE HIP, UNI KNEE AND TOTAL KNEE REPLACEMENT



(57) Abstract: As a general overview, the system (10) is used to assist the surgeon in performing an operation by acquiring and displaying an image of the patient. Subsequent movement of the patient and instruments is tracked and displayed on the image. Images of a selection of implants are stored by the system and may be called to be superimposed on the image. The surgical procedures may be planned using the images of the patient and instruments and implants and stored as a series of sequential tasks referred to defined datums, such as inclination or position. Gestures of the surgeon may be used in the planning stage to call the image of the instruments and in the procedure to increment the planned tasks.

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SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,  
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:  
3 June 2004

**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/CA 03/00947

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 G06F3/00 A61B19/00

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G06F A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 198 45 028 A (SIEMENS AG) 8 June 2000 (2000-06-08) column 5, line 61 - column 6, line 45 -----	1,6-9
Y	US 5 880 976 A (BLACKWELL MICHAEL K ET AL) 9 March 1999 (1999-03-09) column 9, line 26 - line 44 -----	10-13
Y	DE 199 60 020 A (MARMULLA RUEDIGER) 21 June 2001 (2001-06-21) column 2, line 32 - line 41 -----	10
Y	DE 199 60 020 A (MARMULLA RUEDIGER) 21 June 2001 (2001-06-21) column 2, line 32 - line 41 -----	11-13
A	US 6 201 984 B1 (FUNDA JANEZ ET AL) 13 March 2001 (2001-03-13) column 6, line 23 - line 59 -----	1
A	DE 39 17 876 A (AESCULAP WERKE AG) 6 December 1990 (1990-12-06) column 2, line 33 - line 64 -----	14

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

1 December 2003

08.03.2004

Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CA 03/00947

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: 15  
because they relate to subject matter not required to be searched by this Authority, namely:  
**Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery**
2.  Claims Nos.: 2-5, 15-17  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
**see FURTHER INFORMATION sheet PCT/ISA/210**
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

**see additional sheet**

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**1, 6-14**

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest.  
 No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1,6-14

A computer implemented method for enhancing interaction between a user and a surgical computer assisted system using hand gestures and bar code identification means.

2. claim: 19

A method for a computer assisted surgery system displaying a magnified virtual representation.

3. claims: 20,21

A method of assisting a surgical procedure by monitoring an implant and supervising a representation thereof on a beforehand obtained image of a patient.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.1

Claims Nos.: 15

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery

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Continuation of Box I.2

Claims Nos.: 2-5, 15-17

The wording of claim 2 is not clear (Article 6 PCT), as there seems to be a grammatical error which renders claim 2, followed by dependent claims 3-5, incomprehensible (see especially "that is tracked").

The relation of the orientation of the image with respect to the imaging device in claim 15, followed by dependent claims 16 and 17, is not clear (Article 6 PCT). It is further not clear, what kind of information is extracted from the orientation (Article 6 PCT).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA 03/00947

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